

LAPA-West SURVEY OF OTHER STATES ZEBRA MUSSEL EXPERIENCE

CALIFORNIA

1. What agency (or agencies) in charge of ZM issues?
DFG leads and supports the interagency team;
Gloria Sandoval, Department of Boating and Waterways, cell 916-715-1657
Steve Lyle, Department of Food and Agriculture, 916-654-0462
Roy Stearns, Department of Parks and Recreation, 916-654-2270
Pete Weisser, Department of Water Resources, 916-653-3350
Dana Michaels, Department of Fish and Game, 916-322-2420
USFWS, USBR, NPS-Lake Mead, Metropolitan Water District of Southern California, Natural Resources Agency, State Lands Commission, State Water Resources Control Board, CalFire, USGS, USACE, USFS
DFG have an excellent web site; <http://www.dfg.ca.gov/invasives/quaggamussel/>
DFG has Quagga/Zebra Mussel Program which has both headquarters and field staff.
DFG is the lead agency and provides the science, but agencies that manage waterbodies are in charge of their own.
2. When QM's first discovered? How discovered?
Lake Mead NV Jan 2007, and found in California Colorado River waters soon after. Now known to be in 23 California waters, all but one fed by the Colorado River water, which is also the only known zebra mussel population in central CA.
3. What actions were taken at the infected lake upon the discovery?
In early 2007, surface and SCUBA surveys were conducted to establish extent of infestation. San Justo Reservoir has been closed to public access since zebra mussels were discovered there in Jan 2008. Some infested waterbodies in southern CA have started a watercraft inspection program for all exiting watercraft.
4. What immediate actions were taken to prevent spread to other lakes?
In January 2007, California implemented a multi-agency incident command system (ICS) to respond to the discovery of qm in the Colorado River and waterbodies in Southern CA. The ICS was demobilized in mid-March; however, federal and state agencies continue to meet on a regular basis. Strong program implemented as described in other answers.
5. Do you target only water bodies susceptible to ZM growth?
Extensive analysis of susceptibility of all waterbodies was done and used to prioritize efforts.
[2008 - Potential distribution of zebra mussels \(*Dreissena polymorpha*\) and quagga mussels \(*Dreissena bugensis*\) in California - Phase 1 report](#) (PDF) This report tabulates vulnerable and not vulnerable sites based on several assumptions of calcium threshold. It is important to note that this report does not include every waterbody within the state. DFG's Regional Scientist have conducted risk analysis for the majority of the state. Also, the following is an interesting report on calcium threshold;
<http://www.nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=3870> The preliminary conclusion is that 20 mg/l is the minimum needed for a reproducing self-sustaining population.
6. What do you believe is the most probable transfer mechanism from lake to lake?
Probably got to Lake Mead on a boat hull, and spread downstream in the Colorado River via veligers. Also have one lake in Central California, probably transported via a boat, bait water, or heavy equipment.
7. What actions are taken now upon discovery of a new infestation?
It varies between waterbodies.

LAPA-West SURVEY OF OTHER STATES ZEBRA MUSSEL EXPERIENCE

San Justo reservoir in central Calif. has been closed by the local agencies since mussels were discovered in Jan 2008, and eradication options are being considered. It is a 30,000 acre feet lake. Some lakes stay open with little or no precautions.

8. What is your states program now to attempt to prevent transfer from lake to lake?

Actions include:

- Increased inspections at California Department of Food and Agriculture Border Protection Stations
- Training local agencies at waterbodies to assist in monitoring water bodies statewide
- Statewide monitoring program is being developed and implemented
- Training of DFG staff (wardens and biologists) and local agencies' staff to conduct watercraft inspections
- Each of DFG's six regions have access to a portable wash stations
- USBR is currently developing an eradication plan for Zebra mussels in San Justo Reservoir
- DFG works with infested waterbodies to develop Response Plans in accordance to Fish and Game Code Section 2301
- DFG works with uninfested reservoirs to develop Prevention Programs in accordance to Fish and Game Code 2302
- Distribute public outreach and education materials including direct mailings to boat owners, posting
- Staff a public information hotline

9. Do you have boat ramp monitoring program? If so, how many hours/day/week?

Watercraft inspections occurring at the local level (i.e. at launch ramps) are being staffed by local agencies. Requirements vary from water to water, and some locations have instituted a fee to underwrite inspection services.

10. Do you prohibit launching of boats known to be recently in infected waters?

Some local agencies who have implemented a watercraft inspection program prohibit the launching of watercraft that are known to have recently visited infected waterbodys.

11. What enforcement powers do you have to prevent launching? Under what conditions? What financial penalties?

- Title 14 Section 671 prohibits the possession, importation, and transportation of prohibited species
- Fish and Game Code 2301 allows DFG and designated agencies the ability to inspect and quarantine conveyances for quagga/zebra mussels
 - Can prohibit launch of a boat if it might be contaminated
 - Stop and inspect and require cleaning
 - Impound or quarantine boat and/or trailer
 - Close some waterbodys infested or susceptible to infestation
 - Regulations are being drafted to give DFG the ability to fine up to \$1,000

12. What has been the impact on water bodies impacted with ZM?

The southern California Metropolitan Water district is spending several \$M a year cleaning mussels off the grates which screen debris and treating their water to minimize the further spread of veligers. . Boaters in the Colorado River area where boats can be left in the water for extended periods are experiencing the growth of adult mussels which create problems.

13. Have you been successful in preventing or reducing the spread?

ZM has been detected at 22 waterbodys which all received infested water from the CO River. One population of zm has been detected in central CA. To date, no other populations have been detected; however, we continue an aggressive statewide monitoring program.

LAPA-West SURVEY OF OTHER STATES ZEBRA MUSSEL EXPERIENCE

14. What has been the ecological change in the infected lakes? Over how many years? How has the change affected recreational usage of the lake?
No significant impact yet. In the great lakes region it took many years for ecological impacts to be recognized.
15. Do you have a standardized, “certified” boat washing/decontamination process? Cost?
DFG never ‘certifies’ a watercraft to be mussel free. It is recommended that watercraft users thoroughly clean, drain, and dry their watercraft between uses. Drying time varies depending on the time of the year and weather. Ideally in warm, dry weather, watercraft should be dried out at a minimum 5 days. Ideally in cool, wet weather, watercraft should be dried out at a minimum of 30 days.
Visit the following weblink for a dry time calculator: <http://www.100thmeridian.org/Emersion.asp>.
Boat washing provided at some locations with 140 deg wash including engine cooling system flush. Capture and decontamination of wash water is part of the process.
16. Do you issue permits for fishing tournaments/derbies? If so, do you place any special ZM restrictions or requirements on the permit?
All fishing tournaments permits include quagga/zebra mussel information and are organized so boats will not move from infested waters to un-infested waters.
17. What is your boat registration policy? How much does it cost? Is any part of that registration fee set aside for lake preservation, invasive specie protection, boat ramp maintenance, etc?
A percentage of the boat registration fee goes into the harbor and watercraft fund which funds the invasive species programs. Some western states (Idaho and others) are instating a sticker program which charges \$10 for a mandatory sticker to be applied o the boat, and the \$ go to the invasive species program.
18. Do you have an education/public relations program?
- Great web site
 - Developed outreach and education materials (info cards and posters)
 - Staff a public information sign
 - Attend public events (i.e. sportsmen shows/boat showers) and provide outreach/education
 - PSMFC developed the Don’t Move a Mussel video, available on line or via DVD
19. How do you combat the attitude of some that the spread is inevitable, and it doesn’t mater anyway since they are not all that bad?
This is still a problem in California. But that is why CA has a strong public relations campaign with, wide distribution of literature (including a mailing with all boat registrations), and involvement of all stakeholders. Basically appeal to boaters to clean their boats before and after leaving any waterbody as sound practice to protect our waters. People who man the hotline, which receives complaints about closings and required cleaning among other things, explain the rationale for the program. A big factor is the pocketbook; water bills in southern CA are up noticeably because of cost of combating the mussels, so it is in everyone’s interest to stop the spread.

LAPA-West SURVEY OF OTHER STATES ZEBRA MUSSEL EXPERIENCE

APPENDIX A

Summary of California laws governing spread of Quagga and Zebra mussels from;

What does the law say about these mussels?

Fish and Game Code §2301 and §2302 provides DFG with the following authority to protect the state from invasive mussels.

FGC §2301 applies to waterbodies infested with dreissenid mussels, and relates to Containment Plans

Conveyances (vehicles, boats and other watercraft, containers, and trailers) – DFG

staff and designees (including Border Protection Station staff and State Park Rangers) may do all of the following:

- o Stop and inspect any conveyance (boat, vehicle, trailer, container, etc.) that may carry or contain adult or larval dreissenid mussels.
- o Order that areas in a conveyance that contain water be drained, dried or decontaminated using DFG approved procedures.
- o Impound or quarantine conveyances for the period of time necessary to ensure that all of the mussels on or in the conveyance have died.

Surface Waters and Facilities - DFG staff may do all of the following:

- o Conduct inspections of surface waters and associated facilities located within area that may contain mussels.
- o In some circumstances, close or restrict access to waters or facilities that are either infested or may be infested with mussels.
 - Closure or restriction must be limited to the manner and duration necessary to detect and prevent the spread of mussels within California.
 - Closures require the agreement of the Secretary for Resources and that DFG work with the owner or operator on the scope of the restrictions, especially when they impact the local economy.
 - DFG may work with the effected authority and associated agencies on closure procedures that would minimize the impact upon the local economic and recreational opportunities.

What are the penalties under the law?

Once DFG has adopted regulations for imposing and appealing penalties, it has the authority to impose an administrative penalty of up to \$1,000 on any person who violates FGC §2301, any verbal or written order or regulation adopted pursuant to this section, or who resists, delays, obstructs or interferes with the implementation of this section.

APPENDIX B

Techniques used in California which may be useful.

1. Tagging system: a tag being used by some waterbodies within the state. The tag is placed on the boat/trailer winch line certifying the boat is clean, and the tag will come off when the boat is launched. This is used to inspect boats in advance of a major event such as opening day, so they will not have to line up on the busy day
2. Quarantine: A boat on a trailer is tagged as above at the beginning of the required drying time, and then can be launched after this time with assurance that it has been sufficiently dried.
3. One way spikes on access road: Where boats can only be launched when a launch ramp monitor/inspector is available, boats and trailers are allowed to leave the launch/parking area by locking the ingress route, and allowing egress over a one-way spike system.

LAPA-West SURVEY OF OTHER STATES ZEBRA MUSSEL EXPERIENCE

APPENDIX C

Other information about the California Program

1. The SCMWD has implemented a program to eliminate mussels from their system by introducing chlorine at levels lethal to the mussels at appropriate points. Initially this was done for a week, and restarted when needed. Now it is 24/7, because the critters shut down when they need to, and are ready to restart when the chlorine stops.
2. The DFG is only part of the team responding to this threat, but they have full time staff of 4 at headquarters, and 3 in southern Calif, plus involvement of many others in DFG, and countless others in the partner agencies and lake managers. There are 4,000 waterbodys in CA.
3. Volunteerism is not a large part of the CA program. They have volunteer monitors, looking for infestations in lakes like we do in Mass, but little or nothing in the way of volunteer launch inspectors/monitors.

APPENDIX D

Information Sources

1. Dominique Norton of the DFG Zebra/Quagga program <DNORTON@dfg.ca.gov>
2. Douglas Ball LA Dept of Power and Water <douglas.ball@ladwp.com>
3. The CA DFG zebra/quagga web site <http://www.dfg.ca.gov/invasives/quaggamussel/>

Dominique and Doug were very helpful, and the web site is full of great information

NOTE

Additional information we should get when available;

1. Action plan for Western States. (being written, preliminary version here;
http://www.anstaskforce.gov/Meetings/2009_May/QZAP_WRP_5-11-09.pdf)
2. Plan for decontamination of Justin reservoir. (It is being developed, and Potassium Chloride, 100mg/l, as was used in a small quarry in Virginia is one option)
3. Boat launch monitoring/inspection protocol/Guidance Document. (being developed by the 100th meridian group)

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